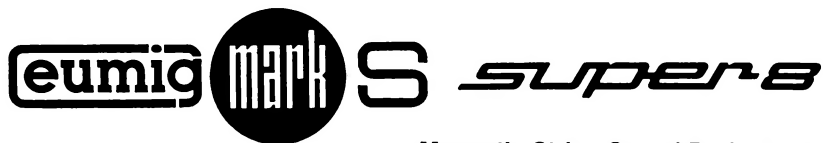


eumig **mark S** ***SUPER 8***



Magnetic Stripe Sound Projector for the SUPER 8 Format

The EUMIG MARK-S SUPER 8 projector is supplied with the following:

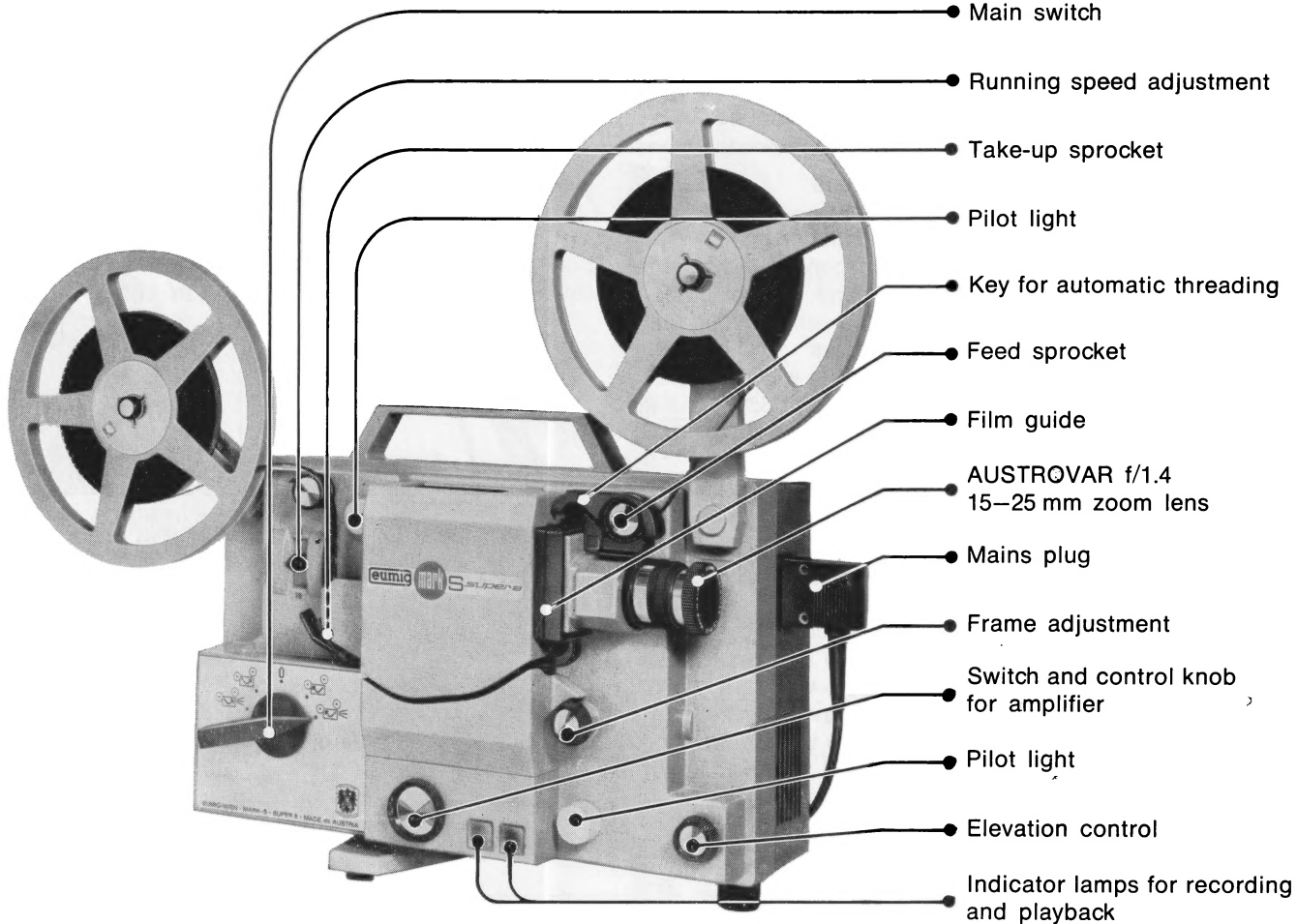
- 1 Microphone
- 1 Head set
- 1 Phono-input plug
- 1 Plug for connecting external speaker
- 1 Mixing unit control cable, which disengages automatic modulation control when using mixing unit
- 3 Spare fuses
- 1 Mains cable with plug
- 1 Empty reel, for 350 ft of film
- 1 Instruction booklet
- 1 Guarantee card

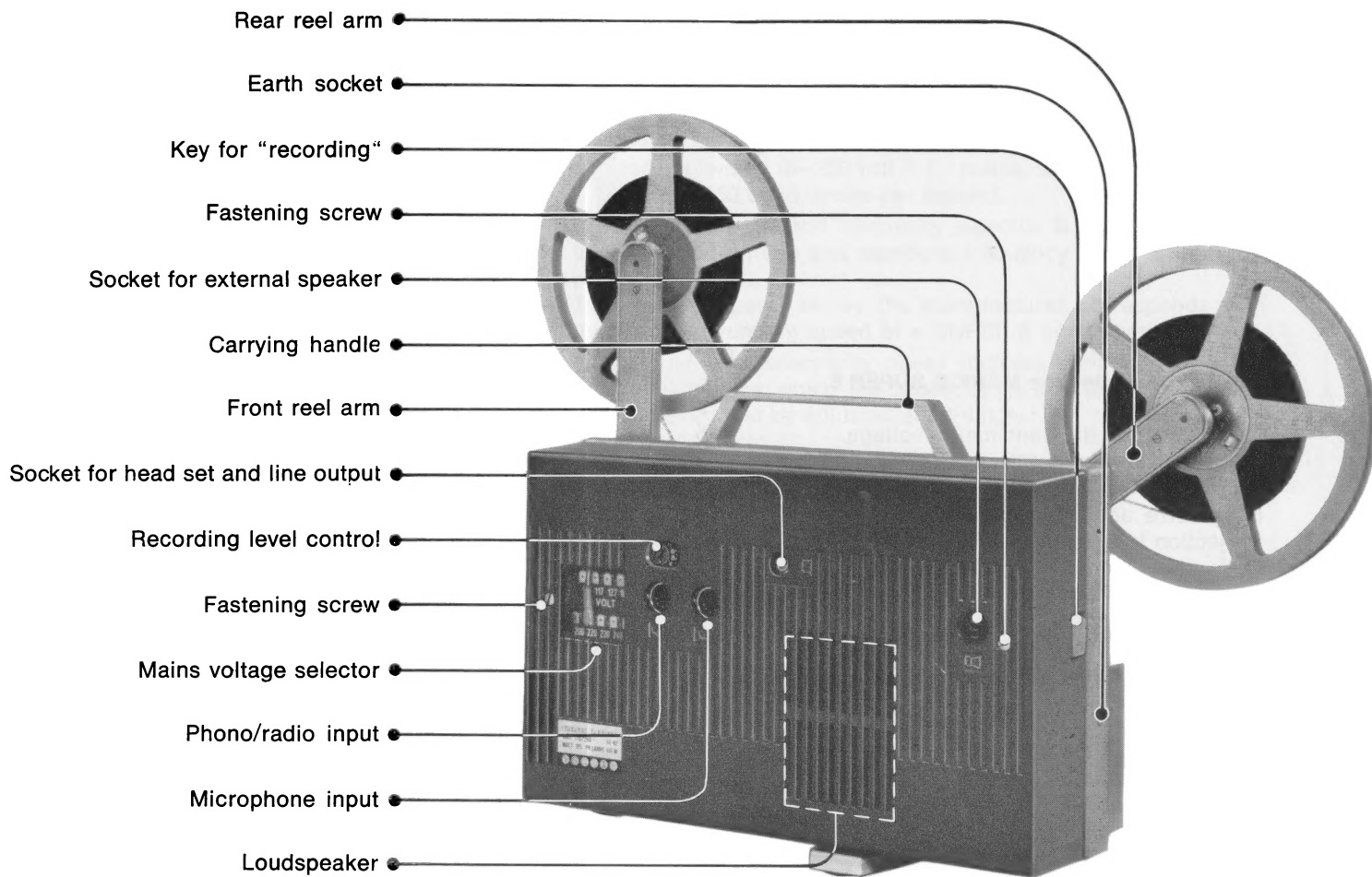
The following further EUMIG accessories are available from your dealer:

- | | |
|---|-------------|
| 550 ft reel | 790 U 110 |
| Dynamic directional microphone with on-off switch | 790 U 106 |
| External loudspeaker | 790 U 107 |
| Connecting cable for line output (one end free) | 790 U 109 |
| Sound cable with split (banana) plug | 790 U 100 |
| Sound cable with multiple plug | 790 U 101 |
| Sound cable with American phono-plug | 790 U 103 |
| Sound cable that can be connected to any desired type of plug | 790 U 104 |
| Replacement sound head | 0 701 U 142 |

Order Number:

Careful study of the following pages will familiarise you with all the excellent features the EUMIG MARK-S SUPER 8 offers, enabling you to get the most from the equipment.





Contents

	page		page
Before connecting the MARK-S SUPER 8 to the mains	5	Recording level control	18
Changing to a different mains voltage	5	Speech via microphone socket + music via phono socket (automatic mixing)	19
Adjusting the mains frequency to 50 or 60 c/s	5	Using a mixing unit	19
Projection	6	Erasing	19
Image size and fine focussing	11	Connecting an external speaker	20
Projection lens AUSTROVAR f/1.4 15–25 mm	11	Head set outlet and line outlet	21
Frame adjustment	12	Changing the projection lamp	22
Elevation adjustment	12	Centring the projection lamp	23
Reverse projection	13	Changing the pilot lamps	24
Rewinding the film	13	Inserting a new fuse	24
Taking out a partly run film	14	Removing the sound head	25
Adjusting the running speed	15	Maintenance of the EUMIG MARK-S SUPER 8 projector	25
Adding sound	16	The sound system — some hints concerning the sound track	26
Recording through a microphone	16	Circuit diagram	27
Plug for connection of radio, record player or a tape recorder	17	Technical data	28
Music from radio/phono input	18		

Before connecting the EUMIG MARK-S SUPER 8 to the mains

Check the mains voltage and type of current of your electricity supply. The EUMIG MARK-S SUPER 8 is designed for use with 110–250 volt A. C. mains, and can be switched to either 50 or 60 cycles per second.

Voltage selector **A** and frequency selector **D** are generally set to the mains voltage and standard frequency of the country of purchase.

The running speed set by the manufacturer corresponds with the standard running speed of a SUPER 8 movie camera.

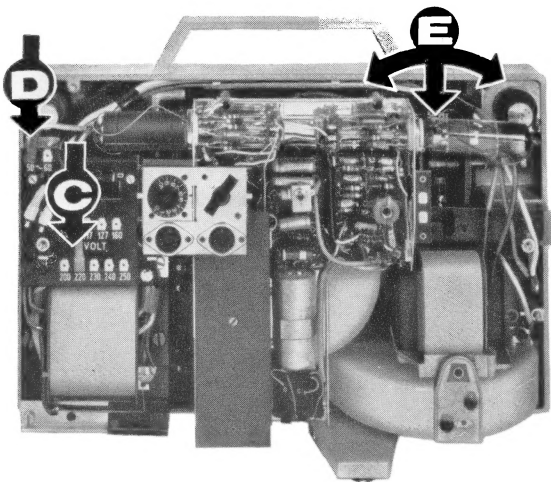
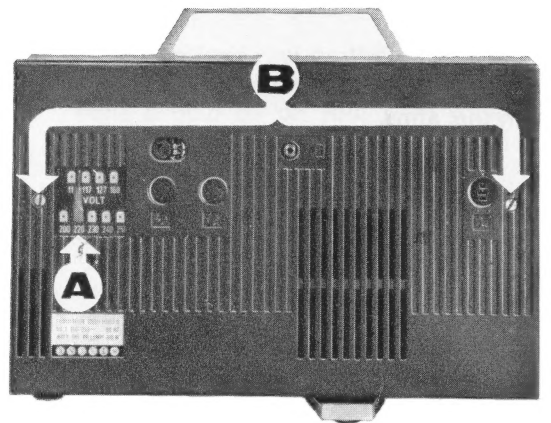
Should your electricity meter indicate a voltage different from that for which the projector is set, then the voltage selector must be adjusted accordingly.

Changing to a different mains voltage. (Only with the unit disconnected from the mains!)

1. Undo the two screws **B**.
2. Remove the back cover.
3. Pull out red voltage plug **C** in an upward direction, and plug into the correct position.
4. Replace the back cover.

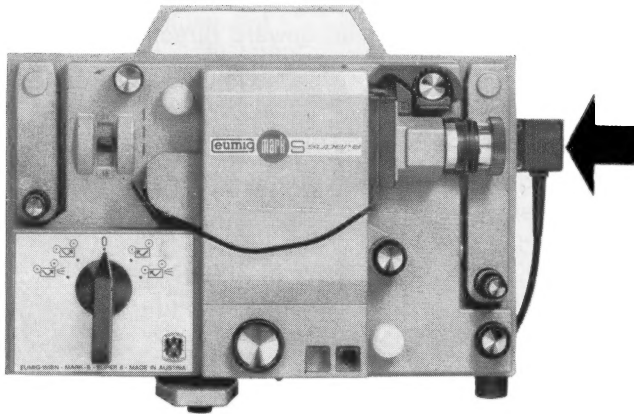
Adjusting the mains frequency to 50 or 60 c/s

1. Pull out blue plug **D** in an upward direction and plug into the correct socket.
2. Adjust the running speed of the projector to the changed frequency. Sliding lever **E** is moved in such a way that the correct frequency can be read above the valves.

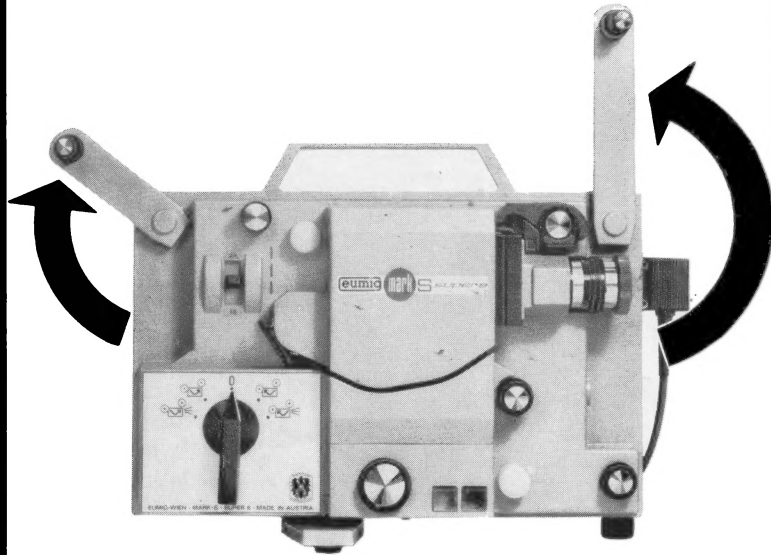


Projection

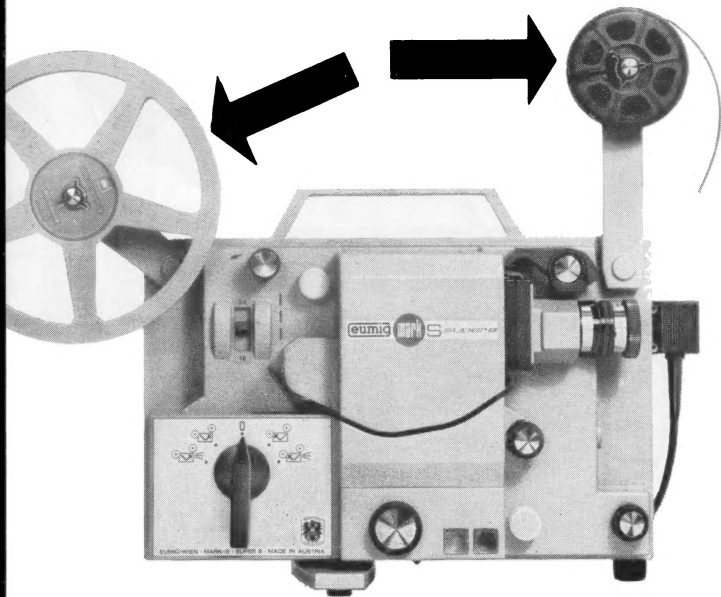
Connect the projector to the mains. (The pilot lamps light up). Allow the unit to run for a few minutes to warm it up.




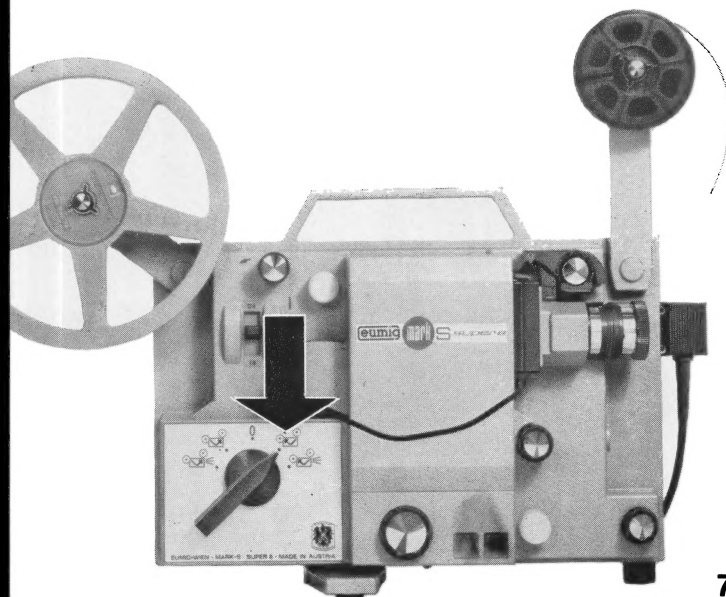
Erect both reel arms.



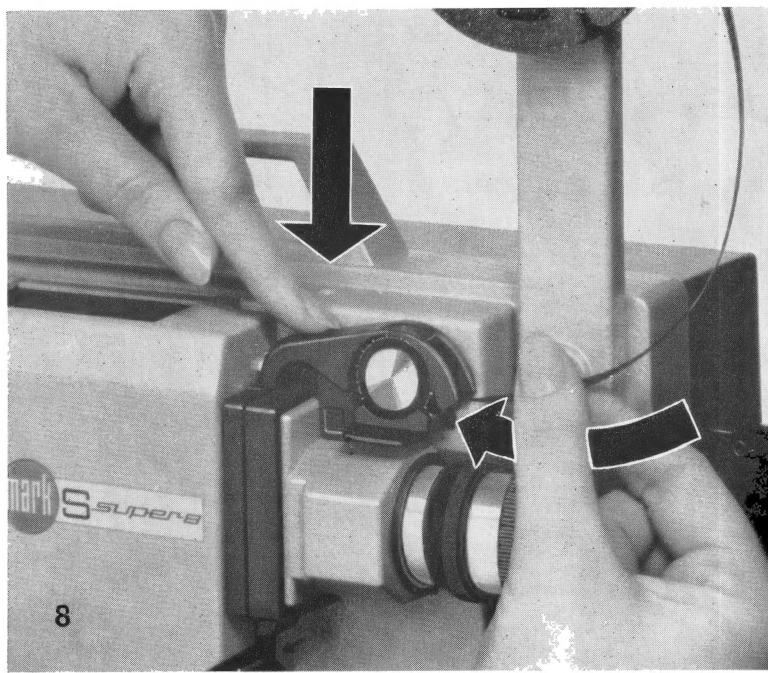
Place the feed reel on the front, and the take-up reel on the rear reel arm (the film perforations should be on your right when standing behind the projector).



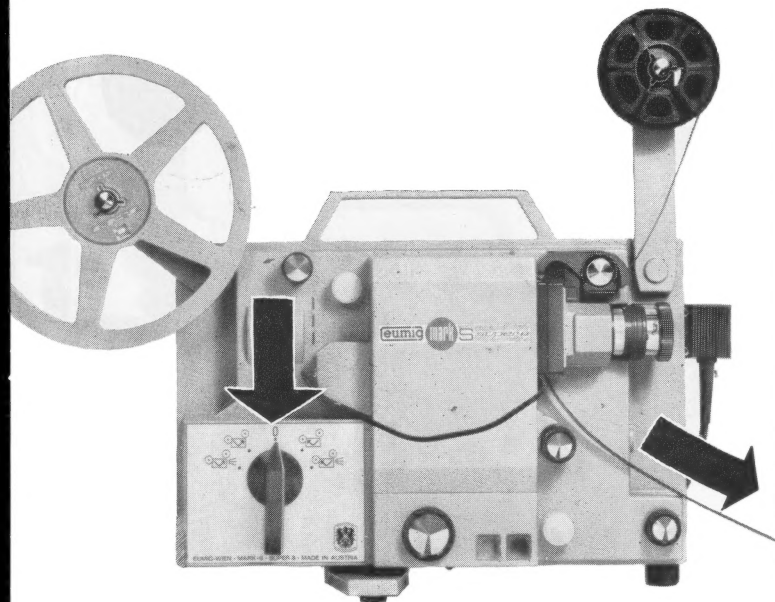
Switch the projector to "forward without lamp". 



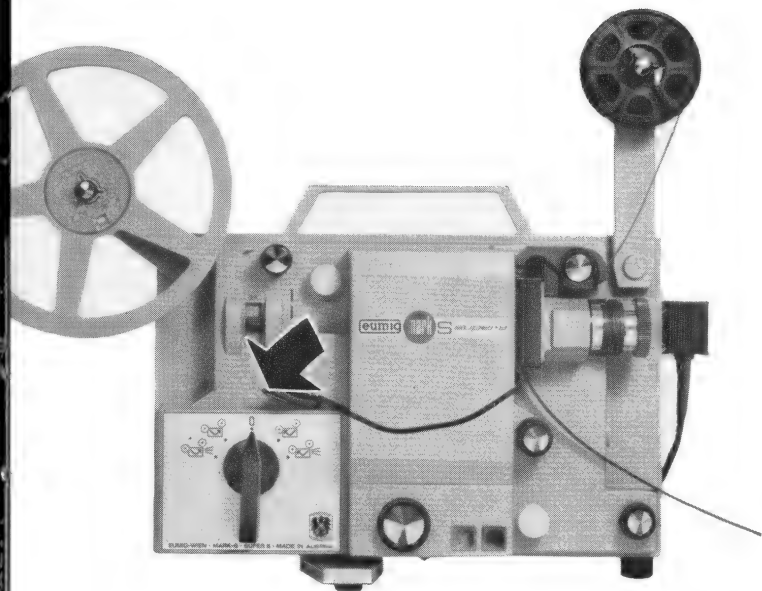
First firmly depress the film-threading key and allow the film to run through the automatic threader. Only let go of the key when the film emerges below the pressure plate



Allow approx. 20 in. of film to emerge from the film track. Then set main switch to "0".



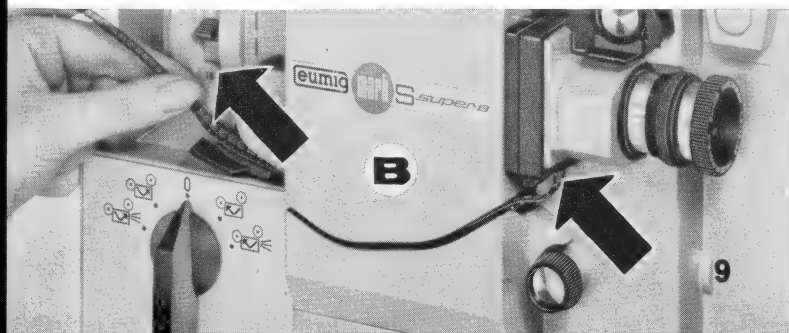
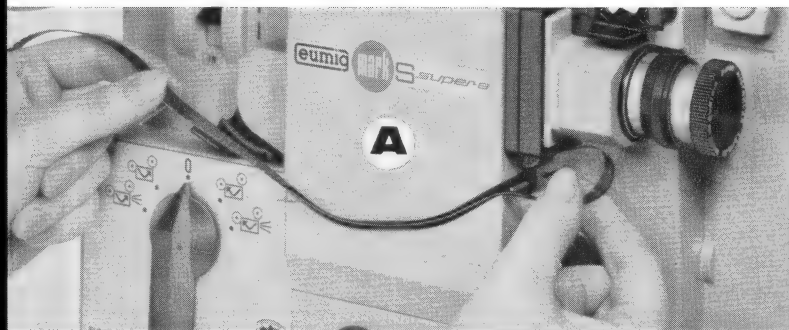
Open the catch of the take-up sprocket.



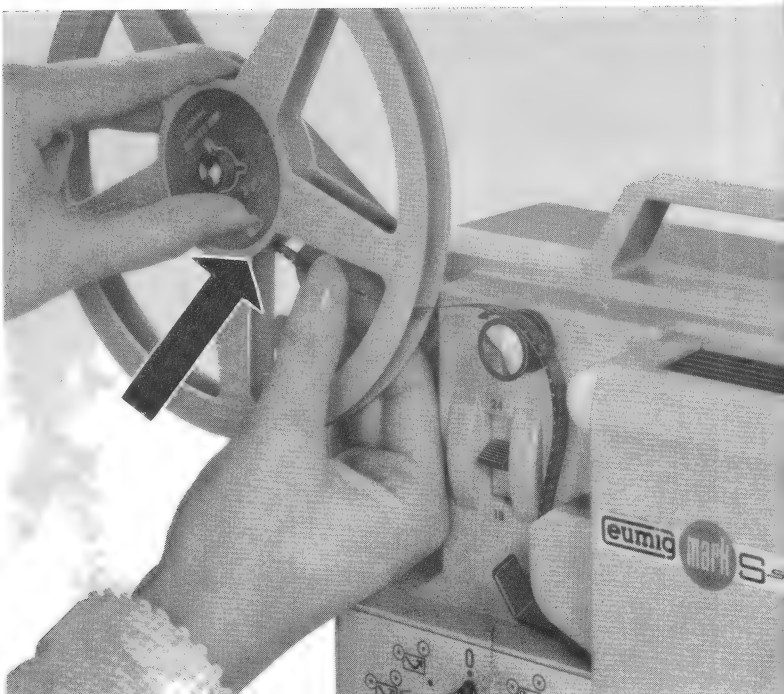
Insert the film with both hands into film channel and takeup sprocket **A**. Pull enough film through to the left to cover the traced out film path **B**.


Take care not to remove the film loop above the film guide.

Ensure that the perforations of the film engages the take-up sprocket correctly. Close the take-up sprocket.



Guide the film to the take-up reel, and attach.
(Note direction of rotation!)



Set main switch to "projection". 

The pilot lamps are extinguished and projection begins.

When projection is complete return main switch to the "0" position.

Further information about the EUMIG MARK-S SUPER 8 as a sound projector on pages 16-21.

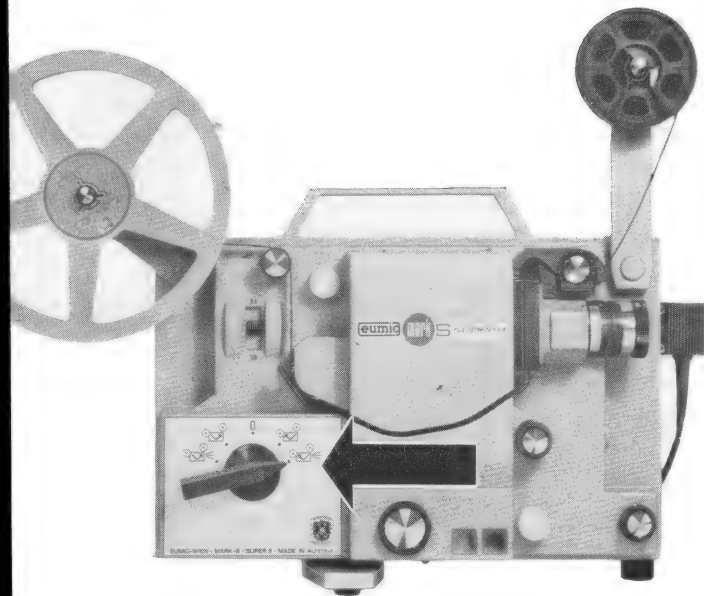
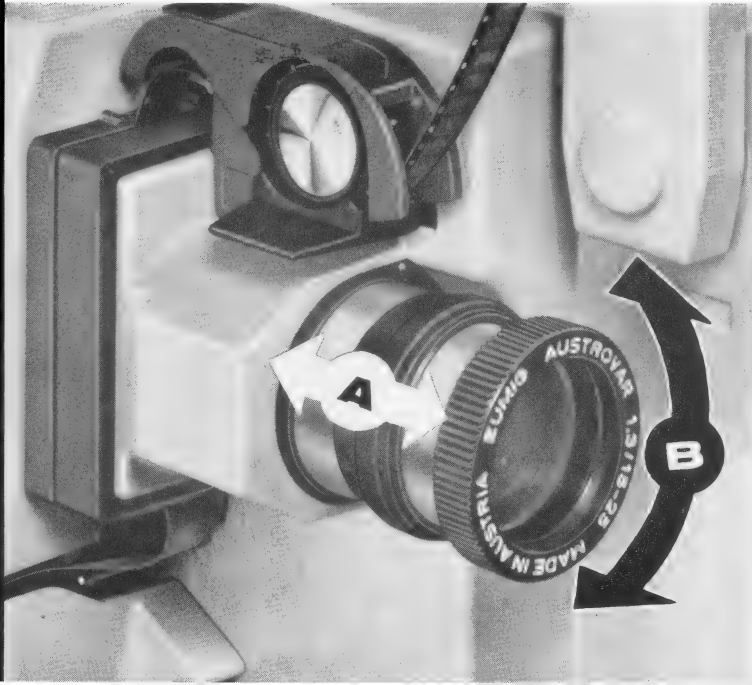


Image size and fine focussing

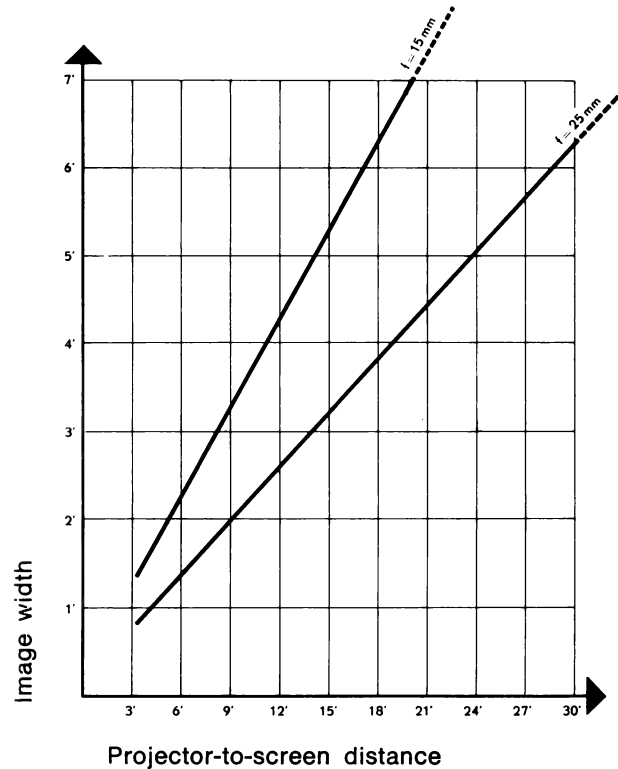
The **image size** desired on the screen is attained by adjusting the sliding ring **A** on the projector lens.

Fine focussing is then achieved by rotation of the lens **B**.



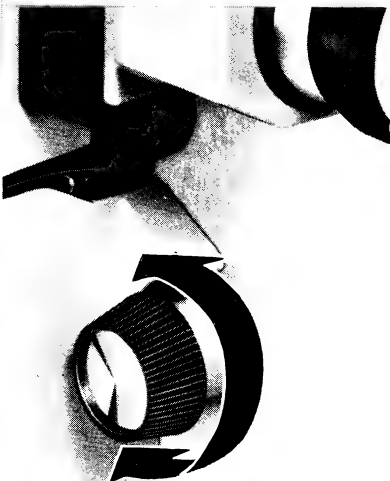
AUSTROVAR f/1.4 15–25 mm projection lens

This diagram shows the interrelationship between focal length, projector-to-screen distance and image width.



Frame adjustment

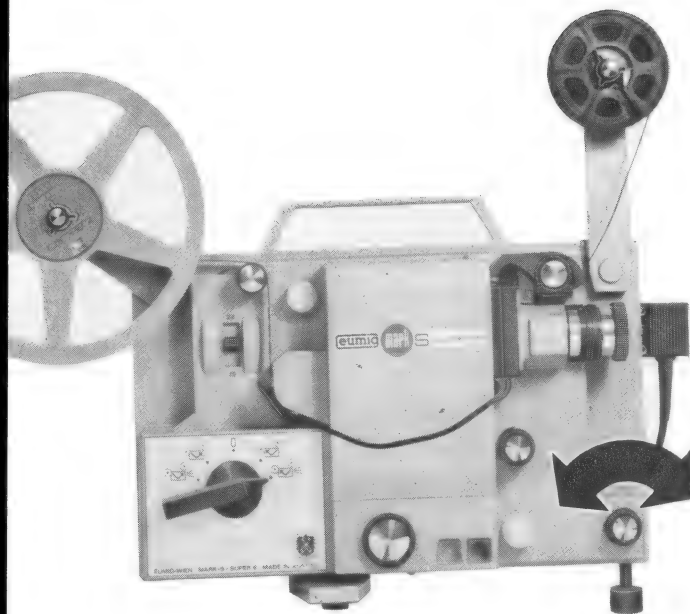
If the dividing line between two frames is visible on the screen...




... rotate the adjusting knob until this line disappears.

Elevation adjustment

1. Turn the height adjustment knob to the left.
2. Tilt the projector to the desired angle by holding the front part of the carrying handle. (The support foot will slide out.)
3. Lock the foot in position by turning the knob in a clockwise direction.



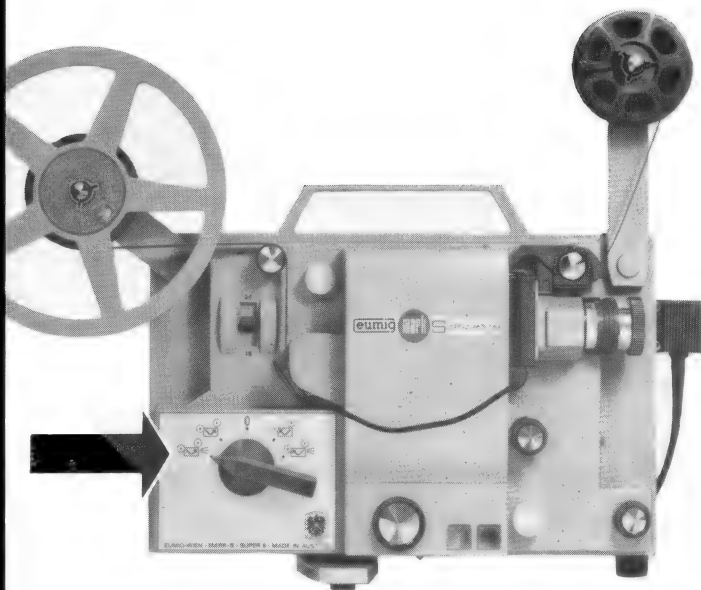
Reverse projection

Set the main switch to "reverse". 


The film is now projected in reverse, (only silent projection, of course).

When altering the projection direction, it might be necessary to make a frame adjustment.

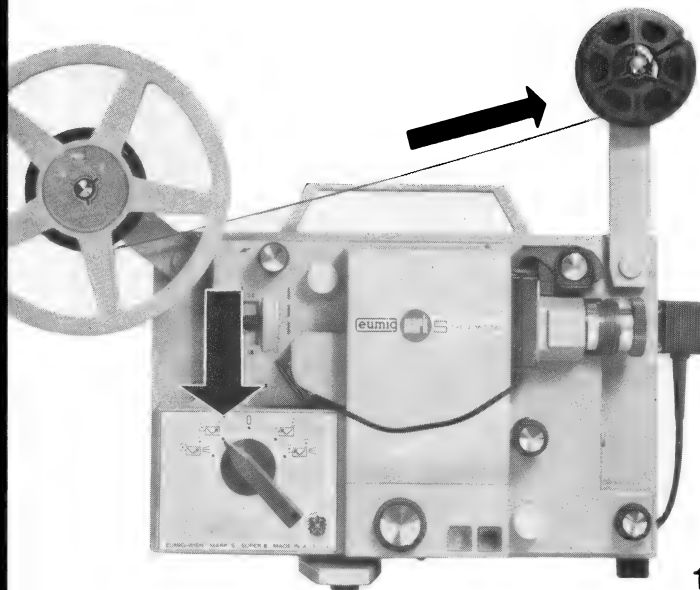
With films which have been wrongly spooled, reverse projection is only possible after an initial complete run-through.



Rewinding the film

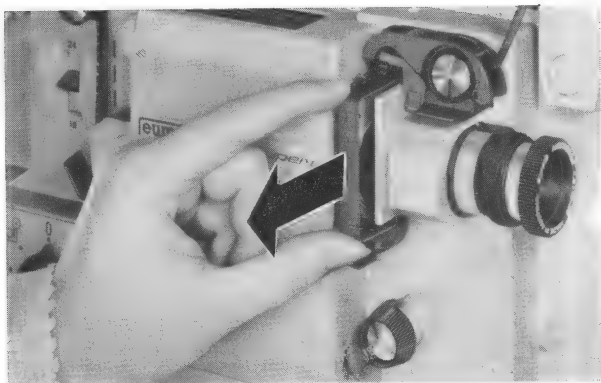
After projection, attach the film-end to the front reel without passing through the projector. Set the main switch to "rewind". 

The film will now be rapidly rewound.

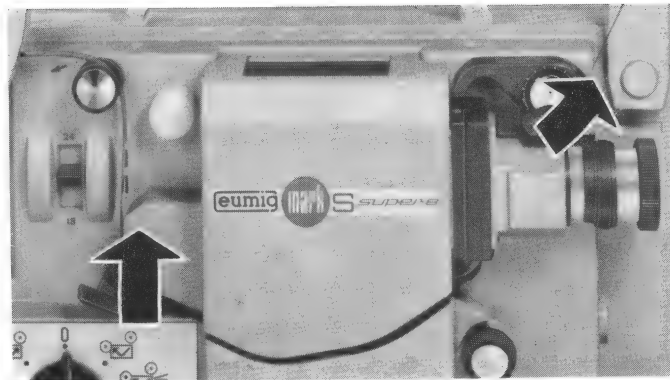


Taking out a partly run film

1. Pull out pressure plate.
(Main switch set to "0".)



2. Open catches of feed- and take-up sprockets.



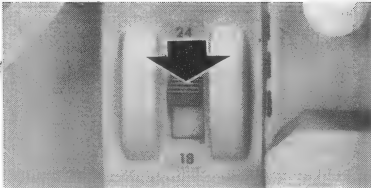
3. Remove film from its channel.
4. Push back pressure plate.

The film can now be rewound as described on the previous page.

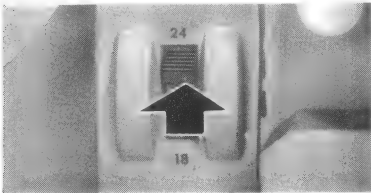
Do not remove or replace the sound-head lid when there is a film in the projector.

Adjusting the running speed

When you want to show films which were not shot at the standard running speed of 18 frames per second, but at 24 frames per second (such as commercially available feature films), you can change the running speed of the projector.



Switch pressed right down = 18 fps setting.



Switch pressed right up = 24 fps setting.

The speed of the projector can be adjusted to any position between the two extreme settings for 18 and 25 fps.

IMPORTANT! Before adjusting the running speed:

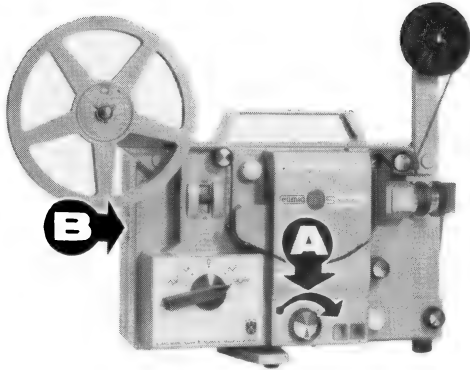
1. Connect projector to the mains **but only adjust the running speed when projector is switched off** (i.e. when the main switch is at the "0" setting).
2. Before projecting **with sound** after switching from 24 fps to 18 fps, allow approx. 2 minutes interval to permit the flywheel speed to settle.

Adding sound

Important:

Disconnect the sound unit during silent projection (by raising the sound head).

According to the manufacturer, the sound head has a life of approximately 200 hours, and it should only be called into play when sound projection is actually required.



Returning the main switch to “0” automatically releases the red recording key. The projector is then ready for playback (green indicator lamp).

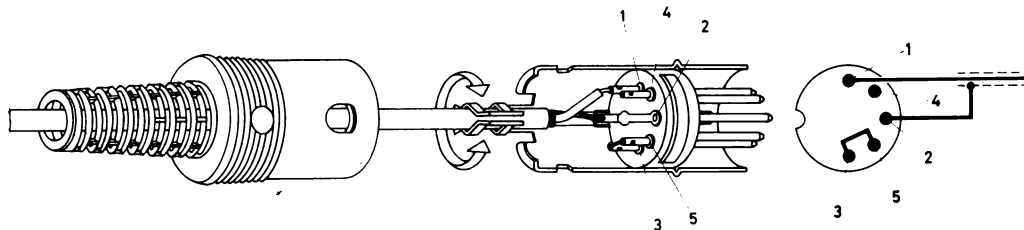
The playback volume is adjusted as desired by means of the volume control **A**.

The modulation causes the green indicator lamp to flicker. This is normal — and not a fault in your projector.

Recording through a microphone

1. Insert the film in the normal manner.
Following the traced out film path exactly assures accurate synchronisation of picture and sound. (Standard picture to sound separation is 18 frames).
2. Switch on the sound **A**, and await lighting of green indicator lamp.
3. Connect microphone (microphone socket).
4. Adjust the volume control **A** to the **lowest level** and set main switch to “projection”.
5. Depress red recording key **B**.
6. You can now speak into the microphone and/or hold it near the loudspeaker of your radio or record player. In this way you can achieve “sound mixing”.
The correct balance between the volume of your voice and that of the loudspeaker can be found by experimentation, or it can be determined by “monitoring” with a head-set during recording.
Keep the microphone well away from the projector during recording.

Plug for connection of radio, record player or a tape recorder

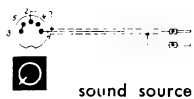
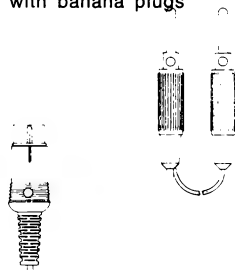


This special plug supplied with your EUMIG MARK-S SUPER 8 enables you to connect a radio, record player or a tape recorder to your projector.

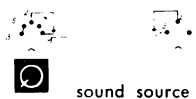
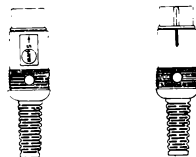
For faultless operation, it is absolutely essential that this switch is wired exactly as illustrated. The pins 3 and 5 must be connected by a wire bridge. The short-circuiting of these two contacts is essential for perfect operation of the automatic mixing control. You can have this little job done professionally, if you prefer.

We also provide a selection of re-recording leads, which you can obtain from your cine dealer.

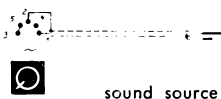
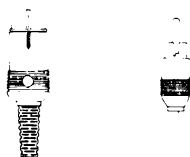
Type: 790 U 100
with banana plugs



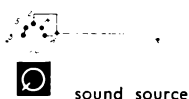
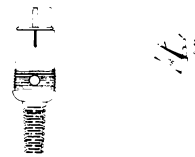
Type: 790 U 101
with German plug



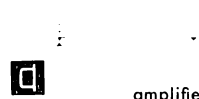
Type: 790 U 103
with RCA
phono plug




Type: 790 U 104
for connection
of any special plug



Type: 790 U 109
connecting cable
for line output



Music from radio/phono input

1. Insert the film.
2. Switch on sound head (green indicator lamp).
3. Connect radio, record player or tape recorder to socket .
4. Set main switch to "projection".
5. When the part of the film has been reached where recording should commence, press red recording key (red indicator lamp).

Recording level control



The "manual" recording level control is situated above the radio/phono socket. The radio/phono-input is designed to cater for the normal output impedance of the average, radio, record player or tape recorder. The level of the sound source being used can be adjusted through the recording level control, which is initially set by the manufacturers to an average setting. This setting should be regarded as a general standard

If a test recording should indicate that the replay volume is too low, then turn the recording level control **very slightly in a clockwise direction**.

If the recording sounds distorted, adjust the recording level control by turning it in an **anti-clockwise** direction.

The recording level setting can be checked through a head-set. The scale on the recording level control serves to enable you to memorise and repeat any predetermined setting.

Speech via microphone socket + music via phono socket (automatic mixing)

1. Insert the film.
2. Switch on sound head (green indicator lamp).
3. Connect gramophone, radio, or tape recorder to socket 
4. Connect microphone to socket 
5. Set main switch to "projection".
6. Press red recording key.
7. You can now speak your commentary into the microphone.

While recording, hold the microphone well away from the projector.



When listening to the playback, you will notice that the music becomes softer as soon as you start to speak, and will gradually resume its original volume after the commentary has finished.

The relative volume of the music in relationship to the commentary, i.e. the volume ratio between speech and music, can be regulated through the recording level control, and monitored through a head-set.

- Background music too loud: adjust in anti-clockwise direction.
- Background music too soft: adjust in clockwise direction.

It is advisable to make trial recordings, for the determination of the correct recording level control setting, on a continuous film loop.

Using a mixing unit

The special mixing unit cable provided enables any commercially available mixing unit (400 kOhm) to be connected. This disengages the automatic mixing and recording level control. The plugs must be inserted into the appropriately marked sockets  . Recording level control is possible through direct monitoring.

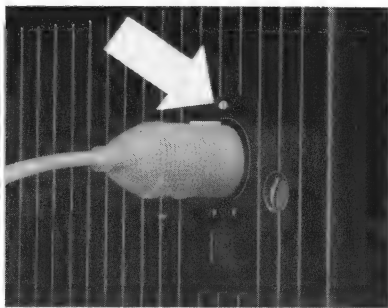
Erasing


1. Leave the radio/phono and microphone sockets free.
2. Set the main switch to "forward **without** lamp".
3. When you reach that point on the film where you wish to begin the erasure, depress the red recording key. Each new recording **automatically** erases any previous recording on the tape, just as in a normal tape recorder.

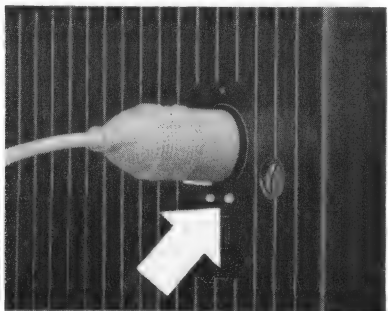
Connecting an external speaker

On the back of the EUMIG MARK-S SUPER 8 you will find the external loud-speaker socket (data: 4–8 Ohm, 2–6 Watt). The EUMIG external speaker, type 790 U 107, is available from your dealer.

For the connection of other types of speaker, your EUMIG MARK-S SUPER 8 is provided with a special plug.



Insert the external speaker plug into its socket , with the mark uppermost. This cuts out the internal speaker, so that **you will hear only the external speaker**, which is best placed near the projection screen.



When the plug is inserted with **mark down**,  **both speakers will be heard simultaneously.**

Head set outlet and line outlet

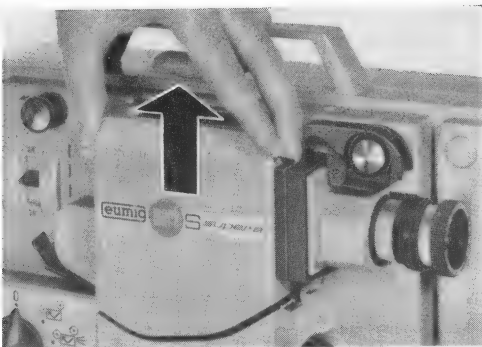


The head set outlet (line outlet) offers the following possibilities:

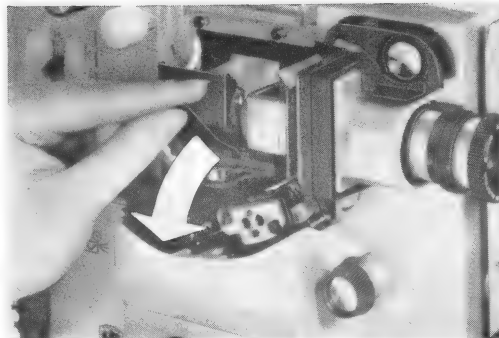
1. Direct monitoring of recording level control (see page 18) or of automatic mixing (see page 19) through a high-resistance head set.
2. Direct recording level control when using a mixing unit. In both cases the head set plug must be pulled out during replay, as failure to do this would cause a reduction in the frequency range at the high end of the scale.
3. The possible connection of hi-fi equipment for re-play calls for the use of a jack plug with diameter 3.5 mm. or 3.6 mm. The EUMIG connection cable for line outlet, type 790 U 109, is available for this purpose.

Changing the projector lamp (100 W/12 V halogen lamp, life 50 hours)

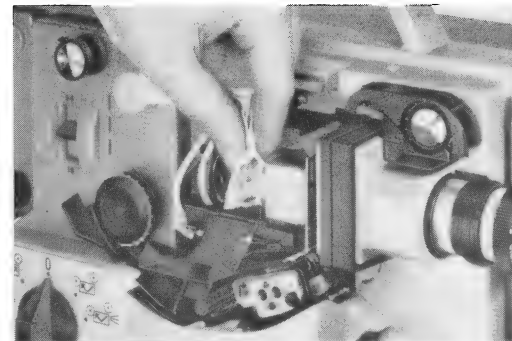
Remove lid of lamp housing.



Hinge the protective plate down and pull out the projection lamp (when cool) in an upward direction.



A new lamp can now be inserted.



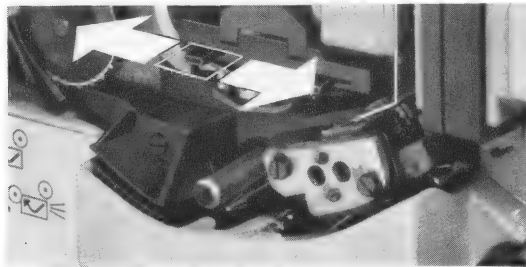
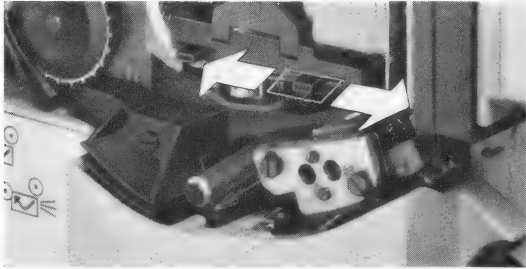
Never touch the lamp with your bare fingers. Every finger mark will be burnt into the sleeve of the halogen lamp, and this reduces the light output.

If you should have accidentally touched the lamp, clean **immediately** with a clean cloth damped with methylated spirit.

The lamp filament is very sensitive to knocks, both during projection and while cooling down.

Please note: Operating at too high a voltage considerably reduces the life of the lamp. (If necessary, set the voltage adjustment to one step higher).

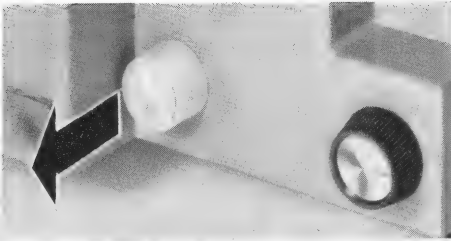
Centring the projection lamp



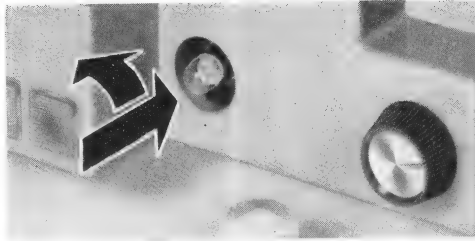
1. Point the projector towards the screen.
2. Set main switch to "projection".
3. Move the front centring lever until any lateral darkening of the image area disappears.
4. Move the rear centring lever until illumination is as uniform as possible.
5. Replace the lid of the lamp housing.

Changing the pilot lamps (12 V/2 W – bayonet base)

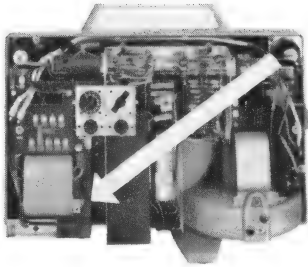
1. Remove plastic cover.



2. Press bulb in, turn to the left, and remove.



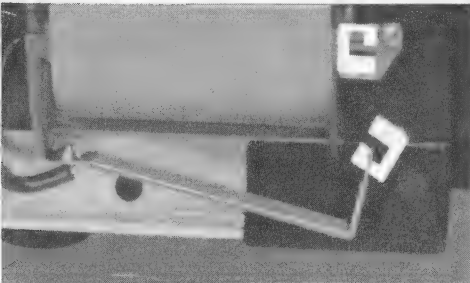
3. Insert new bulb, (press in and turn to the right). Replace plastic cover.



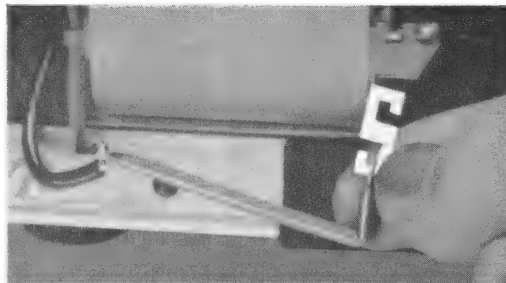
Inserting a new fuse (Only after disconnecting projector from mains)

The thermo fuse guards against overheating of the transformer due to excessively prolonged projection, but does not protect the projector against serious damage caused through connection to the wrong mains voltage.

1. Remove burnt-out fuse.



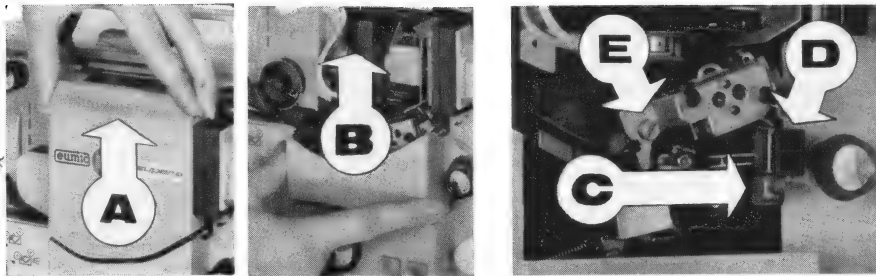
2. Insert new fuse into the contact spring . . .



3. . . . and attach at the top.



Removing the sound head (for replacement or cleaning)



1. Remove the two lids **A** and **B**.
2. Pull out the plug **C**.
3. Pull out the plug **D**.
4. Undo the screw **E**.

The sound head can now be removed.

For re-insertion follow the reverse procedure. Take care that the leads do not get in the way of any moving parts or of the passing film.

Maintenance of the EUMIG MARK-S SUPER 8 Projector

All moving parts of the EUMIG MARK-S SUPER 8 are permanently lubricated and require no maintenance.

The film path should be cleaned from time to time, to free it from any adhering dust or film particles. Use a soft cloth or soft brush. More persistent dirt can be removed with a cocktail stick or tooth-pick. Sound head, shaft and rubber roller should also be cleaned at intervals, depending on the amount of usage. Never use a metal object!

The lens can be removed completely from its socket, and can be cleaned with a soft cloth or brush. Removal of the lens renders the film gate accessible, which can be best cleaned with a soft, round brush. Take care not to bend the rotary disc shutter.

The sound system — Some hints concerning the sound track

The sound track

Striping for sound of SUPER 8 mm. films can be carried out throughout the whole world. Every good photographic dealer can give you addresses of firms who undertake this work. You can also consult the EUMIG agent in your country. You will find a list of all EUMIG agents throughout the world on the guarantee card which accompanies every EUMIG MARK-S SUPER 8.

How is striping done?

1. An 0.7 mm. wide ribbon of magnetic tape is bonded onto the film.
2. A solution of iron oxide in a quick-drying liquid is sprayed along the edge of the film.

We recommend the use of films which have been striped by the first-mentioned method.

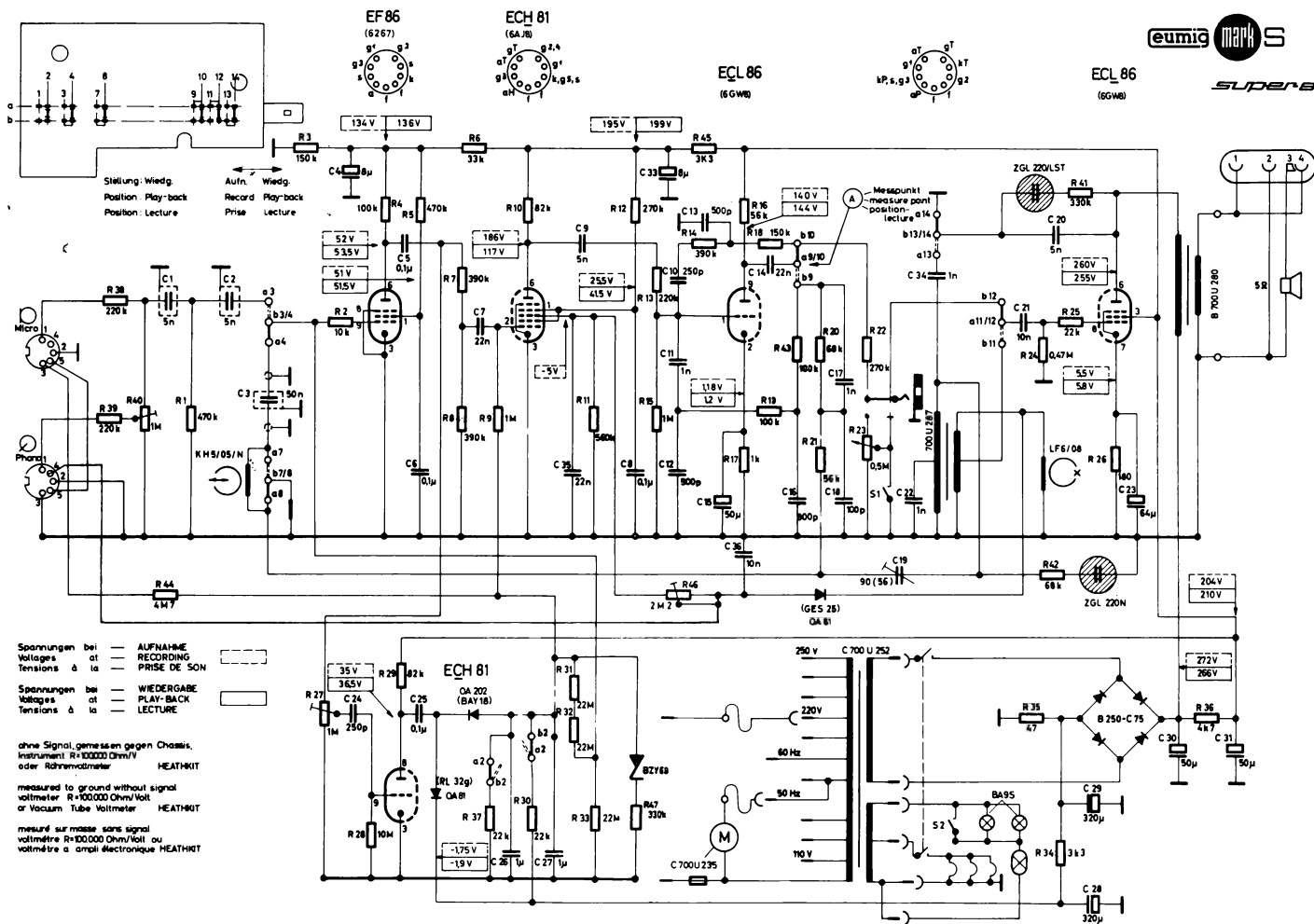
When is striping done?

1. On processing.
2. After editing.

Both methods give excellent results. We would, however, recommend the second, as this enables a continuous stripe to be added to the finally edited film, thus avoiding "drop-outs" at the points of splicing. Remember also that a striped film will occupy more space, so that when you send a film for striping, a 120 m. reel should contain a maximum of 105 m. of film, and a 180 m. reel should contain no more than 150 m. of film.

What is essential for good sound reproduction with striped film?

1. Exact and clean splicing.
2. Keeping the films clean (film cleaning materials, as well as anti-static cloths, are available from your dealer).
3. Films should not be cleaned or treated with anti-static media before striping, as the sound stripe might otherwise not adhere properly.
4. Dust-free film storage (preferably in cans).
5. Protection of the films against excessive drying out (use tightly closing cans, and insert a special "film-fresh" material, or possibly a moist piece of blotting paper).
6. Keeping sound heads clean (use a soft brush).

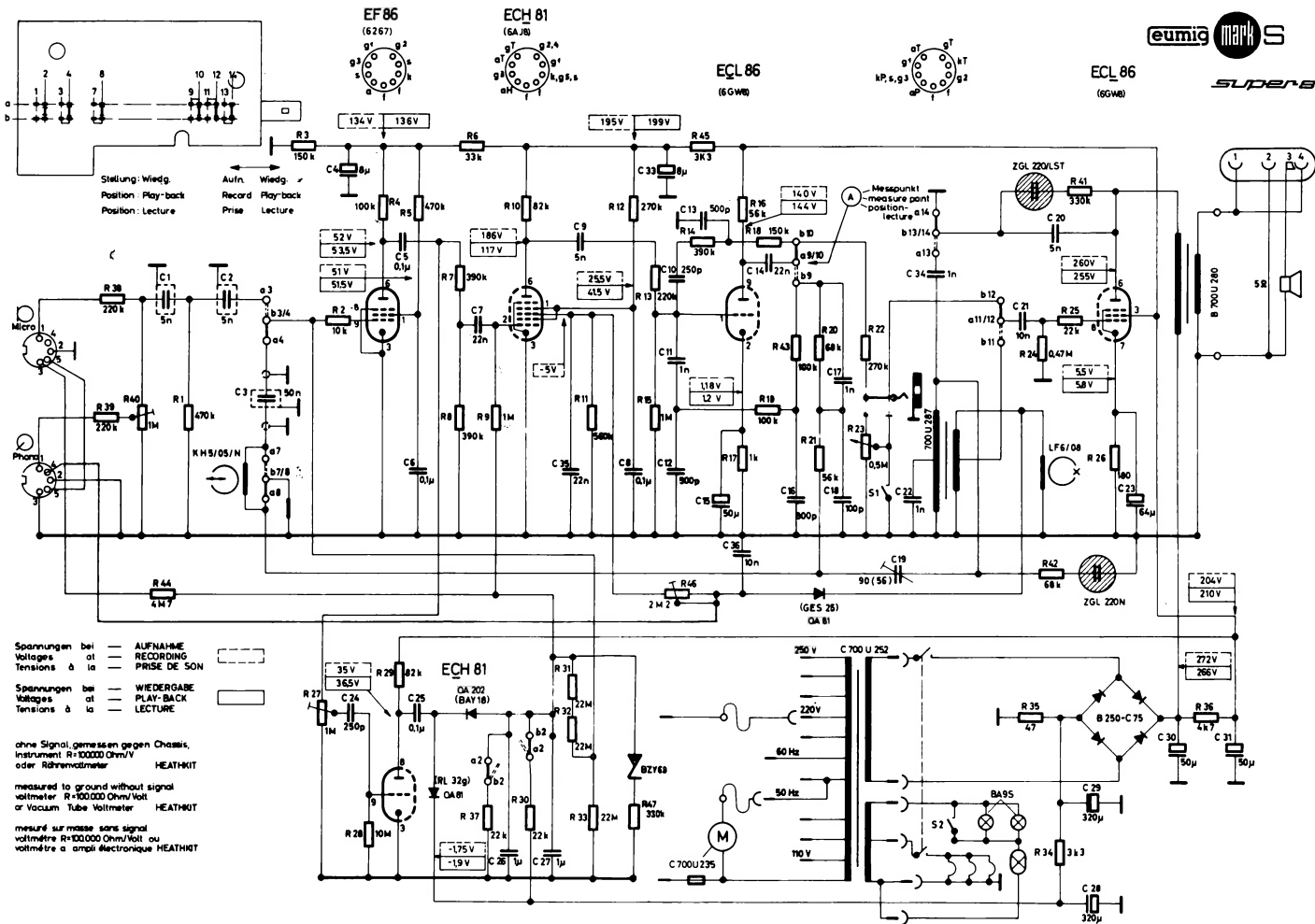


Technical data:

Microphone input:	2–50 mV, impedance approx. 400 kOhm.
Radio/phono input:	2 mV–1.9 V, 400 kOhm – 200 kOhm.
Recording level control:	Level fluctuations of 28–30 db are compensated. Response time 5 milliseconds. Rest pause, dependent on recording level, max. approx. 50 secs. (The automatic recording level control can be disengaged through the use of a special “cable for mixing unit“.)
Room noise suppression:	By increased recording level (the recorder amplifier only becomes active at a microphone input of approx. 1.8 mV).
Frequency response:	
playback amplifier:	45–10,000 c/s.
of sound track:	75– 6,800 c/s at 18 fps. 75– 9,000 c/s at 24 fps.
Head set outlet:	high impedance, more than 2000 Ohm
Line outlet:	approx. 1,5 V/500 kOhm
Loudspeaker:	4–8 Ohm, 2–6 Watt.

Playback/projection
time in minutes:

Feet	Meters	18 fps	24 fps
100	30	6 $\frac{1}{2}$	5
200	60	13	10
400	120	26	20
600	180	40	30



Technical data:

Microphone input:	2–50 mV, impedance approx. 400 kOhm.			
Radio/phono input:	2 mV–1.9 V, 400 kOhm – 200 kOhm.			
Recording level control:	Level fluctuations of 28–30 db are compensated. Response time 5 milliseconds. Rest pause, dependent on recording level, max. approx. 50 secs. (The automatic recording level control can be disengaged through the use of a special “cable for mixing unit“.)			
Room noise suppression:	By increased recording level (the recorder amplifier only becomes active at a microphone input of approx. 1.8 mV).			
Frequency response:				
playback amplifier:	45–10,000 c/s.			
of sound track:	75– 6,800 c/s at 18 fps.			
	75– 9,000 c/s at 24 fps.			
Head set outlet:	high impedance, more than 2000 Ohm			
Line outlet:	approx. 1,5 V/500 kOhm			
Loudspeaker:	4–8 Ohm, 2–6 Watt.			
Playback/projection time in minutes:	Feet	Meters	18 fps	24 fps

100	30	6 ¹ / ₂	5
200	60	13	10
400	120	26	20
600	180	40	30

The authors of literary, dramatic and musical works are protected by law against anyone who uses their works without payment. So any stripe recording you make of a record, sound or television broadcast, without paying a fee to the author or his agent, will constitute an infringement of his copyright.

We reserve the right to make any improvement to the design without prior notice. — Printed in Austria — E,C-E-1066

We wish you many hours of pleasure
with your



super 8